of the surface of the fang might be present. The ropy sediment presented, under the microscope, the appearance of a mass of acicular crystals of various sizes, interspersed with threads or fibres of some kinds.

"In the solutions of the vinum ferri, the sulphate of iron, the muriate of iron, the phosphoric acid, and of Condy's fluid, certain changes were observable. In the vinum ferri the cloudy precipitate was somewhat increased, and the teeth were dark and discoloured, especially in the fangs, but otherwise uninjured. In the sulphate of iron solution a very copious precipitate had formed. The teeth were not softened throughout their whole thickness, but had a layer of soft substance covering in what of the enamel and dentine remained hard beneath. They were also considerably discoloured. In the solution of the muriate of iron, a large deposit of the cloudy precipitate had accumulated, and in this the teeth lay buried. Their fangs were very soft, and quite flexible, and the enamel was wasted away, and on being touched crumbled down like chalk. In those, again, immersed in the phosphoric acid solution the fangs were quite flexible, and were diminished in bulk; the enamel could be deeply scratched with any blunt instrument, and felt like Derbyshire spar. It was more wasted, but not so soft as that of the teeth in the muriate of iron solution. Notwithstanding this loss of salts of lime, on drying by exposure to the air these teeth have again become hard and unyielding. In the Condy's solution, the teeth were covered by a very dark incrustation, which, however, could be nearly all removed by brushing, or still more effectually by applying dilute muriatic acid; otherwise they were uninjured. The solution itself had become almost colourless.

"From these facts it would appear that certain preparations of iron, when directly applied, do exercise a powerful effect on the substance of the teeth. And the ratio of the effects obtained would seem to prove, that of all the preparations employed in these experiments that of the tincture of the muriate of iron acts most powerfully, the sulphate of iron next, and next to that again, although in comparison very immaterially, the vinum ferri, the other preparations of iron appearing to be inert.

"Of the other substances experimented with, phosphoric acid seems the only one producing injurious effects on the teeth, which it does, however, to a very marked extent."—*Edinburgh Med. Journ.*, Jan. 1866.

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

12. *Acute Uncomplicated Myocarditis in which the Disease was Diagnosticated During Life.*—This case was communicated to the Royal Medical and Chirurgical Society, by Dr. C. B. Radcliffe. It is an example of a grave affection, of which there is little, if any certain knowledge—acute uncomplicated myocarditis—or, in other words acute inflammation of the muscular structure of the heart, without any inflammation of the endocardium or pericardium. The patient was a fine, stout, strong, married man, middle aged, a varnish maker by occupation. For six weeks he had had occasional attacks of sharp pain at the pit of the stomach, and shooting thence into the left arm—attacks evidently of the nature of angina pectoris. In other respects he thought himself well in health, and he was well enough to follow his daily work, and to get about with little or no discomfort up to the day before his death. When seen for the first time (July 27, 1865), the indications of the disorder evidently pointed to a very weak heart. The pulse was extremely feeble, and somewhat slow, but not irregular. The hands were cold and clammy—remarkably so. The first sound of the heart was absent. The cardiac impulse against the walls of the chest could not be felt. The second sound of the heart could be heard: but faintly only, and several times (in an examination extending over several minutes) it was distinctly reduplicated. There were no morbid sounds of any kind whatever. In the attempt to detect the cardiac impulse the patient winced more

than once, and complained of feeling sore and tender at the part. There was no arcus senilis; the arteries were to all appearance free from atheromatous deposits, and, in short, the only indications of physical disorder were those which have been mentioned. The first attack of pain happened at a time of sudden and severe mental trouble. Previous to this the health had been in all respects excellent. The patient was seen for the second time on the following day, and then he was dying. He was sitting awkwardly on the edge of a chair by the side of the bed, supported by his wife. On suggesting that his posture was a very uncomfortable one, he gasped out, "I must keep as I am—I dare not stir." He had been in this position for ten or twelve hours, literally without moving in the least. His face was pale and ghastly; large beads of sweat stood out on the forehead and went trickling down the face; his extremities, upper and lower, were clammy, and corpse-like as to paleness and coldness. The pulse at the wrist had failed altogether. His breathing was short, shallow, and gasping, and with it was a rattle of which the significance could not be mistaken. His mind was clear and collected; he complained of sickness, and said he knew that he was dying. The history given of this sudden change was this—that he got out of bed to pass urine in the middle of the night, after several hours' quiet sleep; and that while up for this purpose the pain at the pit of the stomach returned in an unusually severe form, with cold perspirations, and with a feeling of deadly faintness. For the next four hours this pain continued without intermission, even without alleviation, and then it ceased suddenly, and the condition as suddenly changed to that which has been described. The post-mortem examination was made by Dr. Willis and Dr. Bazire twenty-four hours after death. In the cavity of the pericardium were nearly two ounces of serum, reddened by blood, but having no flakes of lymph in suspension. The pericardium itself presented no traces of inflammation, old or new; its visceral layer was intensely injected with ramifying capillaries filled with dark blood, but without ecchymoses, and elsewhere it was of the natural colour and character. The heart was dilated and flabby. The muscular structure of both ventricles, and in a lesser degree of both auricles also, was soft and friable, of a mulberry-juice colour, almost black in fact, contrasting in this respect in a very marked manner with the natural redness of the muscles of the chest walls. It broke down readily under the finger like hepatized lung. As seen with the naked eye, it did not appear to be fatty, but there were considerable deposits of fat about the exterior of the heart. The endocardium and all the valves were quite healthy, and so also was the aorta. The left ventricle contained some loose very dark clots of semi-coagulated blood; and in the right ventricle were some fibrinous, but not decolorized, clots adherent to the walls. Upon lifting up the heart by a portion of the right ventricle, the muscular structure broke down and tore like wet paper by the weight of the heart itself. Unfortunately, no microscopic examination was practicable. The grounds upon which the diagnosis was made were in the main these: The history of the disease seemed to point to acute rather than to chronic disease, to begin suddenly in a way which suggested the idea of a "broken heart." There was no sufficient reason to suspect pericarditis or endocarditis, for there were none of the morbid sounds which mark the presence of these inflammations. So far seemed plain enough. It seemed, moreover, that the main symptoms were easily explainable on the supposition that the muscular structure of the heart had been attacked by inflammation. Inflammation of the muscular structure of the heart, as a matter of course, would weaken the muscular powers of the structure, and this weakening would account for that failure in the action of the heart which was the most prominent symptom. Moreover, the same weakening would carry along with it, if sufficient in degree, absence of the first cardiac sound, and absence likewise of the usual cardiac impulse. Nay, it seemed as if the symptoms present—sudden failure in the action of the heart, with loss of its first sound and of the impulse at the apex, with some tenderness on pressure in the intercostal spaces in the cardiac region, with some pain, but without the severe pain of pericarditis, without the morbid sounds of pericarditis or endocarditis, and without arcus senilis atheromatous vessels or other signs, good or bad, to point to common fatty heart—were all the symptoms and signs one had a right to expect in inflammation of the muscular structure of the heart. At any rate, it was on these grounds, be they sufficient or insufficient, that the diagnosis was made; and it was this diagnosis which led to the post-mortem examination, for if it had not been so, the body—such was the opposition of the friends—would have gone to the grave unexamined.—*Med. Times and Gaz.*, Feb. 3, 1866.

13. *Fatty Liver in Children.*—In the *post-mortem* examinations of 222 children affected with adipose infiltration or with fatty degeneration of the liver, Drs. STEINER and NEUREUTTER found that in 131 the age was from one to four years. Among the pathological conditions in the course of which fatty liver appears, the most frequent is tuberculosis; and the fact that this state in children is most frequently manifested as disease of the lymphatic glands and not of the lungs, negatives the supposition that the excessive deposit of fatty matter in the liver in connection with tuberculosis is due to deficient oxidation of hydrocarbons. Drs. Steiner and Neureutter consider rather—and in this they agree to some extent with Frerichs—that the origin of fatty liver is to be sought rather in the change in the constitution of the blood induced by the tuberculous disease, and that the liver may be fatty from the commencement of the tuberculous process. Next in order to tuberculosis in connection with fatty liver, is enteritis; which is not, however, to be regarded always as a cause. It may be preceded by the fatty disease; or, in many cases, the two diseases are very probably due to a common cause. The exanthemata may also be followed by fatty liver; and the connection between these is only to be found in the changes of blood. Fatty liver is also observed in connection with diseases of the bones in children, such as tuberculous caries and rickets. It is an error to ascribe the condition of the liver to the use of cod-liver oil in such cases; inasmuch as it is met with in children who have never taken oil, in as advanced a state as in those who have used oil for a year. Cases also of bronchitis, pneumonia, pleuro-pneumonia, and heart disease, sometimes occur in which fatty deposit in the liver is met with. Of the causes indirectly affecting the liver, diet holds a principal place; inasmuch as the children have either a diet very rich in fat, or (especially among the poor) one deficient in fat but rich in hydrocarbons; and the mischievous influence of this diet is increased by the deficient metamorphoses resulting from want of exercise and from impure air. The authors draw a distinction between adipose infiltration and true fatty degeneration; and observes that the former condition appears to be more frequent in children than the latter, inasmuch as it was met with in 188 cases out of the 222 examined. They hence conclude, that in by far the greater number of cases fatty liver is not to be regarded as a result of malnutrition of the hepatic cells, but as the result of causes acting from without.—*Brit. Med. Journ.*, Feb. 10, 1866, from *Wiener Medizin. Wochenschr.*, Dec. 6, 1865.

14. *Inoculability of Tuberculosis.*—M. VILLEMIN says that tuberculosis is the effect of a specific cause, a virus; which, like its congeners, may be propagated in the morbid products to the formation of which it leads by its direct action on the normal elements of the affected tissues. M. Villemin states further that he has established by experiment the fact that this virus, when introduced into a susceptible body, may reproduce itself, and at the same time reproduce the disease of which it is the essential principle.

On March 6, M. Villemin placed two young rabbits, about three weeks old, in a cage; and inserted behind the ear of one of them two small fragments of tubercle and some puriform fluid taken from a cavern in a man who had died of phthisis thirty-three hours previously. On March 30 and April 4, tubercle was again inoculated. At each operation, local symptoms were produced. On June 20, both rabbits were killed. In the animal which had been inoculated, tubercle was found scattered along the greater curvature of the stomach; there were also tuberculous deposits in the small intestine and in the kidneys; and the lungs were full of large tuberculous masses. The other rabbits, which had not been inoculated, but had in other respects been subjected to the same conditions, presented no signs of tubercle.

On July 15, three healthy rabbits, living in an airy situation and supplied with